Artifact Seen in Kidney-Transplant Patient Prior to Injection

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Renal transplants from both living relatives and cadavers have a very high success rate. However, there is a high possibility of complication after surgery. Therefore, it is necessary to perform a baseline renogram within 24 hr after transplantation. This is a case report indicating one patient artifact that may be encountered when imaging renal transplant patients.

A 37-yr-old white male was admitted with chronic renal failure. The patient had suffered from kidney failure for five years. After a cadaver renal transplant to his left side, the patient was brought to the nuclear medicine department for a renogram to evaluate the transplanted kidney's function.

**MATERIALS AND METHODS**

Study:  
Technetium-99m (99mTc) DTPA and iodine-131 (131I) orthoiodohippurate (OIH) renal transplant scintigraphy

Dose:  
10 mCi 99mTc-DTPA and 75 μCi 131I OIH

Collimator:  
Medium energy

Gamma Camera:  
Large field of view

Images:  
30 five-sec dynamic images, 4 five-min static images, and 120-sec dynamic pre-background image.

**ARTIFACT**

Prior to any radionuclide injection, radioactivity from some unknown source appeared on the persistence scope in the area of the transplanted kidney. The technologist checked first for patient and/or camera contamination. The patient had no record of any previous nuclear medicine procedures.

It was later determined that the donor kidney was the source of the activity. The donor had undergone a 99mTc glucoheptonate brain death study approximately 36 hr prior to the renogram. The residual activity in the kidney was the source of the image that appeared on the persistence scope (Fig. 1).

Because the camera was peaked for 99mTc, the activity was detected. However, if the camera had not been peaked for 99mTc, the activity would not have appeared and the results of the renogram could have been compromised.

It is important to obtain a background image prior to injecting the patient with any radionuclide. In this case, there was some activity present, so the background counts were subtracted from the final curve.

**INTERPRETATION**

The patient showed normal renal perfusion on the first five-min 131I OIH image (Fig. 2). The twenty-min renogram curve also demonstrated normal kidney function (Fig. 3).
FIG. 2. Five-min static image of kidney using [\(^{131}\)I]OIH shows normal perfusion.

FIG. 3. Twenty-min renogram curve showing normal kidney activity.

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